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ABSTRACT

After an examination of the "macro" research approach, which deals with a population of adults, and the "micro" approach, which begins with a population of adult students, the micro approach was selected to provide reliable statistical data regarding certain characteristics of University Extension, University of California, Berkeley, students. A sample of 200 enrollees was selected to be interviewed by telephone. The survey instrument was a two-part questionnaire developed by the project and designed (1) to gather personal data about the student, and (2) to discover what the student liked or disliked about the course in which he enrolled and his relationship to, and degree of satisfaction with, University Extension. Data analyzed by the Statistical Package for the Social Sciences were also subjected to other tests: the Pearson Correlation Coefficient, crosstabulation, and factor analysis. Results were then compared with a contemporary macro study conducted in California to determine which segment of the need for postsecondary education that University Extension was successfully meeting. A secondary purpose of correlating degree of student satisfaction with service provided by Extension with demographic characteristics was frustrated by skewed results from satisfaction measures. (The student questionnaire and codebook are appended.) (YLB)

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A SURVEY OF CERTAIN CHARACTERISTICS OF ENROLLEES IN COURSES OFFERED BY UNIVERSITY EXTENSION, UNIVERSITY OF CALIFORNIA, BERKELEY IN THE FALL, 1976 TERM

by

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A SURVEY OF CERTAIN CHARACTERISTICS OF ENROLLEES IN COURSES OFFERED BY UNIVERSITY EXTENSION, UNIVERSITY OF CALIFORNIA, BERKELEY IN THE FALL, 1976 TERM

Background: A perspective on Adult Education Research

In 1961, Dr. Cyril Houle summarized the conclusions of research on adult students as follows:

> While the clientele of each institution has its unique features, certain characteristics are common to all the groups served. In general, high income groups are more likely to take part in educational activities than low income groups. Participation is also positively related to size of the community, the length of residence in it, and the number of different kinds of educational activity available . . . Age is important: the very young adult seldom takes part, but there is a sharp upturn in the late twenties, a fairly consistent level of activity until the age of fifty, and a decline afterward. Married people participate more than single people, and families with school-age children more than families without them. Many more professional, managerial, and technical people take part relative to their number in the population than do people from other occupational groups; next in significance are clerical workers; then skilled laborers, and lastly unskilled laborers. But the most universally important factor is schooling. The higher the formal education of the adult, the more likely it is that he will take part in continuing education.[1]

Subsequent research has filled in many details, but generally confirms Dr. Houle's statement.

Since 1961 the research in adult education has followed one or the other of two broadly conceived methodological paths. The "macro" or needs assessment path deals with a population of adults and attempts to determine the nature and extent of education in their lives, their attitudes about education, and their needs for continuing education. The "micro" approach begins with a population of adult *students* and usually is concerned with determining the underlying psychological motivations behind their participation in education, and demographic characteristics which might differentiate participators from non-participators. It is important to see the distinction between these two approaches because the logical implications which may be drawn from each approach are sometimes confused in the literature. The second ("micro") approach is most often employed because a student population is easier to define and data on students is usually easier to collect. Yet it should be noted that this approach does not logically allow inferences to groups not included in the study; it cannot indicate anything about those who are not becoming students. For this reason, "micro" studies cannot be validly used for the very purposes which adult educators find most interesting -- market surveys and needs assessments.

On the other hand, there are serious methodological problems in those "macro" studies which include in their scope the assessment of the motivations of participants in adult education. First, such studies must deal with a sub-set of the selected sample (the participants as opposed to the non-participants) and secondly "participation" must be defined. With narrow definitions of participation (say, participation in a degree program at an accredited institution) the sub-sample is very small and non-participants dominate. Broader definitions increase the number and diversity of motivations possible (and their interaction) which vitiates the power and importance of the findings.

A large number of "macro" studies have been made, including a seminal and massive project done by Johnston and Rivera in 1962 entitled *Volunteers for Learning*. This study successfully surveyed 11,957 households (out of a probability sample of 13293) and collected data on 23,950 adults, 1928 unmarried youths, and 11,554 children. Sub-samples of this population were more closely examined for in-depth participation and motivational patterns, so "micro" elements were also included in the study. Another such study was done in Oakland, California by London, Wenkert, and Hagstrom.

Of particular influence in this "macro" area has been the work of Allen Tough. Dr. Tough has tackled the problem of defining participation mentioned above by adopting perhaps the broadest possible definition of adult learning. In the process he has developed the concept of the "major learning effort" or "learning project."

> In brief, a learning project is a highly deliberate effort to gain and retain certain definite knowledge and skill, or to change in some other way. To be included, a series of related learning sessions (episodes in which the person's primary intention is to learn) must add up to at least seven hours.
>
> The definition has been designed to include the entire range of major learning efforts. Any method can be included -- reading, listening, observing, attending class, reflecting, practicing, getting answers to questions -- if the person's primary intention during that episode was to gain and retain certain definite knowledge and skill.[2]

Based on this definition Dr. Tough and others using his definition have performed some audacious (and in my view, questionable) studies of adult learning in the U.S. Their extrapolations from the selected samples to the total U.S. population allow (in their view) some conclusions which are, in the terms of this paper, truly "macro":

> First, how many persons conduct at least one major learning effort during the year before the interview? The answer is probably 90 per cent, . . . Now if we look at the mean or median person among these men and women, two dramatic statistics emerge. The typical

> learner conducts five quite distinct learning projects in one year. He or she learns five distinct areas of knowledge and skill. The person spends an average of 100 hours per learning effort -- a total of almost 500 hours per year. This is almost 10 hours per week. . . . In summary, about 20 per cent of all learning projects are planned by a "professional" . . . The professional operates in a group (10 per cent), in a one-to-one situation (7 per cent), or indirectly through completely preprogrammed nonhuman resources such as programmed instruction or television series (3 per cent). In the other 80 per cent of all learning projects, the day-to-day planning is handled by an "amateur." This is usually the learner himself or herself (73 per cent), but occasionally is a friend (3 per cent) or a group of peers (4 per cent).[3]

The above is presented not only because of the national influence that Dr. Tough's work has had but also because it illustrates some of the difficulties with the "macro" approach. The external validity of the studies, the validity of extrapolating from the sample to the population at large, is questionable. Further, it is difficult to use the results in any practical way. This last difficulty stems principally out of the broadness of the definition.

A number of states, seeking information for policy formulation, have commissioned needs assessment studies of adult education. Most of the recent studies of this type have been very usefully summarized by Cross and Zusman in *The Needs of Non-Traditional Learners and the Responses of Non-traditional Programs*. Typical of these studies, and most pertinent to what follows in this paper, is a study done in California in 1975 by Hefferlin, Petersen, and Roelfs *California's need for postsecondary alternatives*. In this study a probability sample of 1048 adult Californians was surveyed by interviewers. Demographic characteristics -- sex, age, race, educational attainment, occupational category, and annual income -- were tabulated and the extent of participation in adult education as well as attitudes concerning the form and substance of adult education were surveyed. "Macro" reports such as this can serve (as will this California report

later in this paper) as base-line data against which surveys of segments of the population surveyed may be compared. These reports may also be replicated and the results compared over time to discern trends.

As indicated above, the most valid use of "micro" studies has been to derive demographic profiles of the student characteristics of defined student populations and to attempt to understand the factors which motivate these students to participate in formal adult education programs. Perhaps the most sustained and sophisticated work in the motivational area has been done by Dr. Roger Boshier of the University of British Columbia. In his view motivational research is important so that programs may be developed which are "compatible with the needs and motives of the participants" and in order "to create learning environments congruent with the needs, expectations and learning styles of adults."[4] Dr. Houle's work, *The Inquiring Mind*, cited in the beginning of this paper, provided the catalyst if not the theoretical foundation for adult education motivation studies. Houle proposed a three-factor typology for characterizing the motivations for participation in adult education -- adult learners are either goal, learning, or activity oriented. In order to test the validity of this typology, Boshier devised an Education Participation Scale (E.P.S.) to measure adult orientations to learning. The scale was developed by having participants rate the applicability to their own experience of statements about possible reasons for participation in adult education on a Likert-like scale of five values ranging from "very much influence" to "very little influence." The statements were phrases such as "to seek knowledge for its own sake" or "to meet new friends." The responses to these statements were then subjected to factor analysis to determine if the correlations between

the scores of particular items resulted in any obvious groupings or clusters. The make-up of the clusters was then examined and a descriptive name was assigned to it as a motivational "factor." Five or six factors emerged -- job competence, social welfare, escape/stimulation, social contact, cognitive interest, and external expectations.

A number of other researchers have followed this same general methodology including most notably Paul Burgess A summary of these studies through 1975 is provided by Roger Boshier in *Adult Education* No. 1, 1976.

Although providing some insight into possible motivations, these studies suffer from several draw-backs. First, there is the question of the application of the results of a particular study to any other population of students. Second, there is the difficulty of interpreting the scale factors in a meaningful way. Given high cognitive scores, what are the implications for action, what can you say about the students which makes sense in practical terms. Third, there is the questionable methodological assumptions regarding the strength of the interactions between the factors. Statistical analysis of Likert (or ordinal) measures, especially as applied to self-judged emotionally and situationally influenced preferences, must be viewed with healthy scepticism. The most valid (and unadventurous) use of "micro" studies is for the purpose of determining demographic characteristics of a defined student body. By the most conservative reckoning, going beyond demographic surveys into attitudes and motivations may be justified, but inferences should be confined to the population surveyed and certainly not to any populations not surveyed (non-participants, for instance).

In summary, it is important to select a methodology appropriate to the research questions in adult education, and to be aware of the limitations of the methodology selected. This may seem to be an obvious conclusion,

and yet examples abound, even in the most prestigious research journals, of an inappropriate methodological approaches.

Background: The Present Study

The study that is presented in the following pages of this paper was prompted by the need for more information about the students served by University Extension, University of California, Berkeley.

University Extension, along with every other element of higher education, is increasingly being required to supply external agencies as well as University administration with facts and figures about its student body. Furthermore, a systematic understanding of the student body characteristics is important to Extension management and programming staff in order to better assess program effectiveness and market trends. These increasing demands are often either very expensive to meet because there is no way to summarize the data that is available, or impossible to fulfill because the requested information is simply not collected. For instance, at Berkeley, enrollment applications (by law) do not request or indicate the sex of the student, let alone the marital status, age, and other data. In such a situation some kind of statistical sampling approach is clearly indicated.

Within the University of California Extension system there have been earlier attempts at surveying student characteristics. Perhaps the most elaborate of these studies was done by Phillip Frandson at UCLA Extension in Spring, 1967. This study was based in statistical methodology and sampled for many of the same attributes tested in the present study. Marjorie Shaevitz surveyed students enrolling in University Extension, San Diego in the Winter quarter, 1971. Of the 5653 students enrolled in that quarter, 3069 (54%) received questionnaires, and 2022 (66% of those receiving questionnaires) returned

questionnaires. Although the lack of a randomized selection process and the relatively high rate non-return probably made valid statistical inference from this study impossible, it nevertheless provides useful information and corroborates other studies.

Purpose

The purpose of the present study was to provide reliable statistical data regarding certain characteristics of University Extension, Berkeley, students. These characteristics might then be compared to those results generated by prior studies to perhaps indicate a shift in the character of service provided by University Extension. Results might also be compared with a contemporary "macro" study conducted in California to determine the segment of the need for postsecondary education that University Extension was successfully meeting.

Secondarily, it was hoped that, within the scope and limitations outlined in previous sections of this paper, degree of student satisfaction with the service provided by Extension could be correlated with demographic characteristics. As will be seen, this secondary purpose was frustrated because of skewed results from satisfaction measures.

Methodology

Questionnaire. A questionnaire was developed and then tested on a few Extension programmers and students (see Appendix I). The questionnaire is divided into two parts with the first part designed to gather personal data about the student, and the second part designed to discover what the student liked or disliked about the course in which he/she enrolled and about his/her relationship to, and degree of satisfaction with, University Extension. Where practical, possible answers were given precoded numerical

values to the right of the center column. Where precoded answers were not practical, for instance for the question about the name of the last school attended, the answers were written down and then later coded after all the interviews were completed.

As the development of the questionnaire progressed, it became apparent that the amount of information we wanted was rather extensive. A knowledge of our student body and the experience of other studies indicated that a mailed questionnaire would probably not result in a high percentage of returns. It was therefore decided that the telephone interview method would yield the best results. Both work and home telephone numbers are routinely requested in the enrollment applications. The interview technhique has its drawbacks, however, and these should be clearly explained, especially since some of the results could be interpreted as having been directly influenced by the choice of survey technique. Personal interviews, even over the telephone, are probably more likely to result in answers which the interviewee believes to be congenial to the interviewer. The high satisfaction and low number of criticisms of University Extension courses were probably attributable in part to the selection of survey technique. On the positive side however, is the fact that the interview technique was also employed by the "macro" study which is used as a comparison with the present study. Thus any survey biases caused by the selection of the survey methodology would be in the same direction

The Effect of Sample Size. The main purpose of the study was to sample the student population for certain attributes, or, in other words, to estimate the proportion of the total population possessed of a certain quality (married, for instance). Under such a circumstance (assuming random selection and independence between subjects) the formula for determining sample size is:

$$n = \frac{Z^2 (P) (1 - P)}{E^2}$$

where n is the sample size, P is the proportion of the sample possessing the attribute and E is the maximum allowable error. Considering the time and resources available to the study we considered that the highest number of people we could contact was 200. We also determined that we wanted to a degree of confidence of .95. Under these circumstances the *maximum* error (E) was calculated as being $\pm$ 6.9, as follows:

$$E = \sqrt{\frac{Z^2 (P) (1 - P)}{n}}$$

$$E = \sqrt{\frac{1.96^2 (.5) (.5)}{200}} = .069 \text{ or } 6.9 \text{ percentage points}$$

That is, if the sample proportion of males and females turned out to be .50 then we could be "95% confident" that the real population proportion of males (and females) was between 43.1 and 56.9%. Although this seemed to be a rather large confidence interval it was felt that the study would yield useful results and that increasing the sample size would not result in significantly more precise results (doubling the sample to 400 at the .95 confidence level would decrease the maximum error to .049 or 4.9 percentage points).

Sample Selection. A sample of 200 enrollees was selected from all of the enrollments between September 15 and October 15, 1976; a period of particularly heavy enrollment for Berkeley Extension. There were approximately 10,000 enrollments during the period, or approximately 1/5 of the total annual enrollment. It was felt that this period was representative of the total annual enrollment population. The sample was selected from cash register "ring up" numbers. All enrollments, whether paid or not, and all refunds, transfers, etc. are rung through the two cash registers. Cash register tapes for the

period were inspected and all non-enrollment items were removed. Each remaining ring up number was given a serial reference number. The sample was then selected by using a random number table, and relating the random number to the ordered serial reference number. The original enrollment application was then retrieved from the file so that the student could be contacted.

Interview Techniques. Most of the telephone interviews were conducted by two students who had experience in telephone interviewing. All of the people involved in the study met several times while the interviews were being conducted to compare notes.

Coding. This study used the Statistical Package for the Social Sciences (SPSS) for the analysis of the data. The codebook for the variables in the study is given in Appendix II. After the study had been completed, several of the open questions were analyzed and the subject variable recoded and grouped into categories (see Appendix III). For instance, the variable occupation (OCCU) was recoded so that the occupation student and unemployed was coded to 0, teacher coded to 2, and so forth.

Findings

The results of the survey are given in Table I. Of the 200 students selected, 168 were successfully interviewed (see Table II).

In addition to calculating a simple breakdown of the characteristics shown in Table I, the data was subjected to several other tests available on SPSS. The Pearson Correlation Coefficient was computed for all possible pairings of the variables. The Pearson Correlation Coefficient is a measure of relative association between two variables with a zero coefficient usually indicating complete independence between variables and a +1 or -1 indicating total correspondence (either positive or negative) between the two variables.

Table I

UNEX - BERKELEY

UNEX Student Survey
Fall 1976

I. Personal Characteristics

Sex	% of Cases	Confidence Interval (.95 level of significance
Male	50.6	42.9 - 58.3
Female	49.4	41.7 - 57.1
Age		
17-24	8.2	4.0 - 12.4
25-38	61.0	53.5 - 68.5
39-66	28.9	21.9 - 35.9
Ethnicity		
Caucasian	88.3	83.4 - 93.2
Minority	11.1	6.3 - 15.7
Missing (1 case)	.6	
Marital Status		
Married	54.9	47.2 - 62.6
Single	45.1	37.4 - 52.8
Children		
Have at Least One Child	47.5	39.8 - 55.2
No Children	52.5	44.8 - 60.2
Registered California Voter		
Yes	84.3	78.7 - 89.9
No	15.7	10.1 - 21.3
Employed		
Full-time	72.2	65.3 - 79.1
Part-time	10.5	5.8 - 15.2
Unemployed	17.3	11.5 - 23.1
Occupational Group		
Student/None	7.4	3.4 - 11.4
Service	19.1	13.0 - 25.2
Teachers	19.1	13.0 - 25.2
Quasi-professionals	41.4	33.8 - 49.0
Professionals	13.0	7.8 - 18.2

UNEX Student Survey (Continued)

Table I (Continued)

	% of Cases	Confidence Interval (.95 level of significance)
Family Income (annual)[1]		
$2,000 - 10,000	19.0	13.0 - 25.0
11,000 - 20,000	37.9	30.4 - 45.4
21,000 - 30,000	24.9	18.2 - 31.6
31,000 - 40,000	10.9	6.1 - 15.7
41,000 - 97,000	7.3	3.3 - 11.3
(25 Missing Cases)		
Level of Education (formal schooling)		
Less than bachelor's degree	22.3	15.4 - 28.1
Bachelor's degree	40.1	32.5 - 47.6
Professional, Masters, PhD	37.6	30.1 - 45.1
Last School Regularly Attended		
U.C.	20.4	14.2 - 26.8
Local Four Year	15.4	9.8 - 21.0
Non-local Four Year	38.3	30.8 - 45.8
Community College/Other	25.9	19.2 - 32.6
II. Purpose		
Why Was Course Taken?		
Personal Reasons	37.0	29.6 - 44.4
Credential or Degree	15.5	9.8 - 21.0
Job Related	47.5	39.8 - 55.2
Are You Taking the Course for Credit?		
Yes - Toward a Degree	13.6	8.3 - 18.9
Yes - No Degree Goal	32.1	24.9 - 39.3
No	53.7	46.0 - 61.4
Missing	.6	
First Received Information Regarding Courses From		
Brochure (catalogue)	26.5	19.7 - 33.3
Friend or Spouse	22.2	15.8 - 28.6
Work/School	30.2	23.1 - 37.3
Other	21.1	19.7 - 33.3

1. The large number of missing cases makes this table difficult to interpret except in a very general way. It is valid only if one assumes that the missing cases are distributed proportionately among the income groupings.

Of all students contacted 32.7% (25.5 - 39.9) claimed that his/her employer knew he/she was taking an Extension course and was in favor of the undertaking, 22.8% (16.4 - 29.2) had received or expected to receive tuition reimbursement from the employer, and 11.1% (6.3 - 15.9) thought that successful completion of the course would be a factor in the employer evaluation of the student.

III. Continuing Education Orientation/Satisfaction

	% of Cases	Confidence Interval (.95 level of significance)
How Many Courses Have You Taken With Extension?		
None	44.0	36.4 - 51.6
1, 2 or 3	33.0	26.1 - 40.7
4 or More	23.0	16.5 - 29.5
Have You Taken Continuing Education Courses In Other Schools?		
Yes	50.9	43.2 - 58.6
No	49.1	41.4 - 56.8
Do You Expect to Take Extension Courses in the Future?		
Yes	90.1	85.5 - 94.7
No	9.9	5.3 - 14.5
How Would You Rate Your Experience with Extension?		
Very Satisfied	46.9	39.2 - 54.6
Satisfied	45.7	38.0 - 53.4
Dissatisfied	5.6	2.1 - 9.1
Very dissatisfied	1.2	0 - 2.9
Missing	.6	

IV. Other

Student awareness of the Continuing Education Unit was much higher than expected, with 44.7% (37.0 - 52.4) having at least a rough idea of what it was, and 29.0% (22.0 - 36.0) expecting to use the CEU in the future.

Table 11

Disposition of Students Selected

	No. of Students
Successfully interviewed, coded and entered	162
Successfully interviewed but lost in keypunch process	6
Successfully interviewed	168
Contacted but received refund	13
Refused to cooperate	2
Unable to contact	17
Selected	200

Because in this case it is a relative measure of association between largely qualitative variables there is no statistical method of determining where a particular association is important -- one is left to his own interpretation. However, as a matter of convention, the following guideline may be used (where $\emptyset$ is the Pearson Correlation Coefficient):

Strength of Association	Range in $\emptyset^n$
Weak	$0 < \emptyset < .33$
Moderate	$.33 < \emptyset < .67$
Strong	$.67 < \emptyset < 1.00$

A table of selected coefficients is shown (Table III).

A much more useful device for testing for systematic associations among selected variables is the crosstabulation, or joint frequency distribution procedure. This involves the construction of frequency distribution tables which indicate the proportion of correspondence between two or more variables. A high chi-square value with a low level of significance would indicate that the variables are, indeed, associated in some way. A selected number of these tables and their interpretations are shown (see Table IV A through Table IV G). In some tables only the coefficient of correlation has been computed.

Finally, the data was submitted to an SPSS subprogram which performs factor analysis. We were particularly interested in whether or not certain characteristics of the student population would be grouped with satisfaction. Primarily because of the high level of satisfaction expressed by most enrollees, the analysis was not significant and the results were uninterpretable -- no discernable clusters of characteristics could be found.

Table III

PEARSON CORELATION COEFFICIENT AND INTERPRETATION FOR SELECTED VARIABLE PAIRS

Selected Variables	Measure	Intrepretation
Sex/Expect tuition from employer	$\hat{\emptyset}$ = - .3264 n = 69 S = .006	More men than women expected tuition reimbursement
Family income/ Taking course for credit	$\hat{\emptyset}$ = - .3092 n = 136 S = .001	Those of higher family income were less likely to be taking a course for credit or toward a degree.
Family income/ Taking course toward a degree	$\hat{\emptyset}$ = - .3316 n = 66 S = .003	
Subscribe to a newspaper/Taking course for degree	$\hat{\emptyset}$ = - .4176 n = 76 S = .001	Those who subscribe to a newspaper were less likely to be taking a course for credit toward a degree or expecting the course to help them advance on the job.
Subscribe to a newspaper/Expect course to help in advancement on job	$\hat{\emptyset}$ = - .2965 n = 51 S = .017	
Attend lectures/ Employer was in support of student taking course	$\hat{\emptyset}$ = - .6580 n = 54 S = .001	Those who attended a lecture were unlikely to be taking a course with the support of their employer.
Registered voter/ Taking course toward degree	$\hat{\emptyset}$ = -.3180 n = 75 S = .003	Registered voters were less likely to be taking a course toward a degree
Taking course for credit/ Expecting tuition reimbursement	$\emptyset$ = - .3491 n = 58 S = .004	Those who were taking a course for credit were less likely to be expecting reimbursement from their employer.
Would use CEU/ Attended lecture	$\emptyset$ = - .2713 n = 70 S = .012	Those who attended a lecture would be less likely to use the CEU while those

[Continued. . .]

Table III (Continued)

Would use CEU/ Employer support	$\hat{\phi}$ = .2796 n = 28 S = .075	whose employers supported them and who expected the course to advance them on the job would use the CEU.
Would use CEU/ Advancement on job	$\hat{\phi}$ = .3333 n = 27 S = .045	
Sex/Use CEU	$\hat{\phi}$ = - .2948 n = 70 S = .007	More men than women would use the CEU
Spouse works full time/Would use CEU	$\hat{\phi}$ = - .3651 n = 28 S = .028	Those whose spouse works full time would be less likely to use the CEU.
Course for credit/ Opportunity to influence course	$\hat{\phi}$ = - .3010 n = 158 S = .001	Those who took non-credit courses felt they had less opportunity to influence the course than those who took the course for credit.

Table IV A

Number of Courses Completed
by Why Course Taken

NCRSCMPL	COUNT / ROW PCT / COL PCT / TOT PCT	WHY COURSE TAKEN: PERSONAL	CREDENTIAL/DEGREE	JOB	ROW TOTAL
Number of Courses Completed with UNEX	NONE	27	10	30	67
		40.3	14.9	44.8	41.4
		45.0	40.0	39.0	
		16.7	6.2	18.5	
	1 OR MORE	33	15	47	95
		34.7	15.8	49.5	58.6
		55.0	60.0	61.0	
		20.4	9.3	29.0	
	COLUMN TOTAL	60	25	77	162
		37.0	15.4	47.5	100.0

r = −.01 (Not Significant)

In general, there was little relation between why course taken and whether student is new or repeater, New students generally take classes for same reasons as repeaters. Slightly more than the expected number of new students were taking courses for personal interest.

Table IVB

Sex by Why Course Taken

SEX	COUNT / ROW PCT / COL PCT / TOT PCT	WHY COURSE TAKEN: PERSONAL	CREDENTIAL/DEGREE	JOB	ROW TOTAL
MALE		22	9	51	82
		26.8	11.0	62.2	50.6
		36.7	36.0	66.2	
		13.6	5.6	31.5	
FEMALE		38	16	26	80
		47.5	20.0	32.5	49.4
		63.3	64.0	33.8	
		23.5	9.9	16.0	
COLUMN TOTAL		60	25	77	162
		37.0	15.4	47.5	100.0

Men are more likely to take a course for job related reasons, women for personal interest reasons.

Table IVC

Credit Toward a Degree by Education

CREDIT	COUNT / ROW PCT / COL PCT / TOT PCT	EDUCATION: LESS THAN BA	EDUCATION: BA+	ROW TOTAL
	NOT APPLYING TOWARD DEGREE	10 18.5 47.6 13.2	44 81.5 80.0 57.9	54 71.1
	APPLYING TOWARD DEGREE	11 50.0 52.4 14.5	11 50.0 20.0 14.5	22 28.9
	COLUMN TOTAL	21 27.6	55 72.4	76 100.0

r = — .27 (s = .01)

While 60% of the non-BA group were taking a course for credit (compared with 43.7% of BA+ group), over half were applying credit toward a degree, while only 1 in 4 of the BA+ group were applying credit toward a degree.

Table IVD

Why Course Taken by Occupation

		OCCUPATION					
	COUNT / ROW PCT / COL PCT / TOT PCT	STUDENT	SERVICE	TEACHER	Q-PRO	PROFES-SIONAL	ROW TOTAL
WHY COURSE TAKEN	PERSONAL	8	11	8	29	4	60
		13.3	18.3	13.3	48.3	6.7	37.0
		66.7	35.5	25.8	43.3	19.0	
		4.9	6.8	4.9	17.9	2.5	
	CRE-DENTIAL/ DEGREE	2	4	12	7	0	25
		8.0	16.0	48.0	28.0	0	15.4
		16.7	12.9	38.7	10.4	0	
		1.2	2.5	7.4	4.3	0	
	JOB	2	16	11	31	17	77
		2.6	20.8	14.3	40.3	22.1	47.5
		16.7	51.6	35.5	46.3	81.0	
		1.2	9.9	6.8	19.1	10.5	
	COLUMN TOTAL	12	31	31	67	21	162
		7.4	19.1	19.1	41.4	13.0	100.0

(Chi square = .0002)

r = .17 (s = .01)

Students were over represented in the "persoanl interest" category; service workers were slightly over represented in "job-related" category; teachers were over represented more than 2 to 1 in "credential or degree" category; quasi-professionals were slightly over represented in "personal interest," and professionals were highly concentrated in "job-related" category. In general, there is a systematic relationship between occupation and why course taken.

Table IV E

Why Course Taken by Education

		COUNT / ROW PCT / COL PCT / TOT PCT	NON BA	BA+	ROW TOTAL
WHY COURSE TAKEN	PERSONAL		14	46	60
			23.3	76.7	37.0
			40.0	36.2	
			8.6	28.4	
	CRE-DENTIAL/DEGREE		7	18	25
			28.0	72.0	15.4
			20.0	14.2	
			4.3	11.1	
	JOB		14	63	77
			18.2	81.8	
			40.0	49.6	
			8.6	38.9	
	COLUMN TOTAL		35	127	162
			21.6	78.4	100.0

In general, people who do not have at least a BA take courses for the same reasons that people with BA's take courses.

Table IV F

Why Course Taken by Age

WHY COURSE TAKEN	AGE: 17-24	25-37	38-66	OVER 66	ROW TOTAL
PERSONAL	3	35	21	1	60
	5.0	58.3	35.0	1.7	37.0
	23.1	37.2	40.4	33.3	
	1.9	21.6	13.0	.6	
CREDENTIAL/DEGREE	3	15	6	1	25
	12.0	60.0	24.0	4.0	15.4
	23.1	16.0	11.5	33.3	
	1.9	9.3	3.7	.6	
JOB	7	44	25	1	77
	9.1	57.1	32.5	1.3	47.5
	53.8	46.8	48.1	33.3	
	4.3	27.2	15.4	.6	
COLUMN TOTAL	13	94	52	3	162
	8.0	58.0	32.1	1.9	100.0

$r = -.05$ (not significant)

In general age seems to have very little to do with why courses are taken. This was true when the table was recalculated using only under 55 and over 55 years. People over 55 take courses for the same reasons people under 55 do.

Table IV G

Age by Sex

AGE	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE	SEX: FEMALE	ROW TOTAL
		6	7	13
		46.2	53.8	8.0
	17-24	7.3	8.7	
		3.7	4.3	
		45	49	94
		47.9	52.1	58.0
	25-37	54.9	61.2	
		27.8	30.2	
		30	22	52
		57.7	42.3	32.1
	38-66	36.6	27.5	
		18.5	13.6	
		1	2	3
		33.3	66.7	1.9
	OVER 66	1.2	2.5	
		.6	1.2	
	COLUMN TOTAL	82	80	162
		50.6	49.4	100.0

$r = -.10 \quad (s = .10)$

There were slightly more women than men in the 17-24 and 25-37 age group, but this is offset by the higher proportion of males in the 38-66 age group.

Conclusions

There were few surprises regarding the distribution of student attributes (Table I). University Extension serves people who are well into adulthood, who are white and well-off financially, and who are well educated. Most of the proportions shown are anticipated in Dr. Houle's analysis at the beginning of this paper. The results confirm previous studies and the informed guesses of University Extension instructors and programming staff. Of particular interest was the confirmation of the impression that the overwhelming majority of University Extension students already have at least a bachelor's degree -- the study indicates that this is true of 77.7% of the student population, and over one-third had a second degree.

Also interesting was the pattern of responses to "why was course taken." For philosophical reasons specified earlier in this paper, and practical reasons associated with the collection of meaningful data, the possible answers were collapsed into only three responses, with "personal reasons" serving as a catch-all for a number of possible psychological motivations. The pattern of responses to this kind of question has long been known to have low validity -- people tend to respond in ways which are considered socially acceptable and to choose the "job related" option most often because of the predisposition of society to emphasize the importance of work. But despite this predisposition, a large minority (37%) of the respondents indicated "personal reasons" as the primary reason for taking the course. Those unfamiliar with Extension, who do not know that as a unit, Extension in the University of California does not grant degrees, will be surprised by the low percentage of people indicating obtaining of a degree or credential as the main reason for taking the course.

Perhaps the most encouraging finding was that over half of the students sampled were repeaters (had taken University Extension courses

before) and that the overwhelming number were satisfied or very satisfied with their experience with Extension and expected to take an Extension course in the future. This statistical result was confirmed by interviewer experience. It was anticipated that there would be some resistance from the selected students -- the questionnaire was extensive, requiring about 15 to 20 minutes to administer, and some of the questions asked were of a rather personal nature. However, the interviewers found most people were pleased with the interest that the study signified. Again, this may be the result of the high educational level of the students -- they could understand why the survey was being performed and how it was likely to be used.

In relating variables, it was interesting that neither education, age, nor whether or not the student had taken a University Extension course previously had any relation to why the student took the course. The results listed in Table III and in Table IV B indicate that women are still less likely to take courses for job-related reasons, and are less likely to be supported by an employer.

Despite the failure of the factor analysis, and despite the lack of any discriminating external variable which could be isolated in a table, there are hints in the data (Table III) and hints from the subjective experience of the interviewers, that University Extension continues to serve a small but significant number of people who have a serious intellectual orientation toward their education -- who are not taking University Extension with job related or credentially related objectives, or even as diversions from the worldly concerns of everyday life. These few people take courses for intellectual stimulation and out of interest and curiosity and find University Extension a valuable resource.

Comparison With Other Studies

A comparison of this study with a nearly contemporary "macro" study of California adults done by Hefferlin, Petersen, and Roelfs in November 1974 presents the most interesting possibilities. The study asked a systematic probability sample of 1,048 adults throughout the state about their education interests and activities. Of those interviewed, approximately 221 or 21% indicated that they were participants in education beyond high school, and of these, 136 indicated they were part-time as opposed to full-time students.

Table V compares the age distribution of the adult learners of the two studies and the age distribution of the entire adult population of California per the 1970 census.

Table V

Comparison of Age Distribution
of California Adults and Adult Students

		California Study (Nov. 1974)			
Age	Adult Population 1970 Census	Combined Part-time & Full-time	Full-time	Part-time	University Extension Study (October 1976)
18-29	29%	59%	83%	34%	30.4%
30-39	18	19	12	27	39.9
40-49	18	13	5	20	18.3
50-59	15	7	-	14	8.9
60+	19	2	-	5	2.5
	99%	100%	100%	100%	100%

Since University Extension does not enroll full-time students, the most valid comparisons are of the University Extension data with the part-time data of the California study and the census data. This table indicates

1. that in the 18-29 and the 40-49 age groupings the distribution between the total adult population, the population of adult education participants (California study), and the University Extension student population is approximately equal.

2. that University Extension enrolls a disproportionate number of adults in the 30-39 age group as compared with the total population and the population of adult students, and a lower than proportionate number of students in the 50+ category.

Table VI shows the racial distribution of the three subject populations.

Table VI

Comparison of Racial Distribution
of California Adults and Adult Students in California

		← California Study (Nov. 1974) →			
Race	Adult Population 1970 Census	Combined Part-time & Full-time	Full-time	Part-time	University Extension Study (October 1976)
White	75%	85%	84%	85%	88.3%
Minority	25	15%	16	15	11.1
	100%	100%	100%	100%	99.4%

University Extension enrolls a disproportionate number of whites as students in comparison with the general population, although the proportion is only slightly higher than the proportions indicated when only adult students are considered.

Table VII

Comparison of Distribution of
Educational Attainment of Adults and Adult Students

		California Study (Nov. 1974)			
Educational Level	Adult Pop. 1970 Census	Full-time & Part-time	Full-time	Part-time	University Extension (Oct. 1976)
Less than B.A.	87%	67%	72%	61%	22.3%
Bachelors Degree	7	22	20	24	40.1
Grad. Degree	6	11	8	15	37.6
	100%	100%	100%	100%	100%

This table indicates, as expected, that the higher the educational level of a California adult, the more likely he is to be a participant in adult education, and the higher the educational level of a California adult student, the more likely he is to enroll in University Extension. Put another way, University Extension serves the more educated end of the spectrum of adult students in California.

Table VIII

Comparison of Income Distribution
of California Adults and Adult Students

		California Study (Nov. 1974)			
Annual Family Income	Adult Pop. 1970 Census	Full-time & Part-time	Full-time	Part-time	University Extension (Oct. 1976)
Under $7000	27%	26%	41	10	8.0%
$7000-$9999	18	13	13	13	3.7
$10,000-$14,999	28	21	10	31	27.0
$15,000 +	27	40	35	46	61.3
	100%	100%	100%	100%	100.0%

Again, Table VIII holds no surprises. University Extension serves a disproportionate number of higher income people.

In addition to these purely demographic statistics the California study comes to an interesting conclusion concerning the motivation behind enrollment in post-secondary courses. "California adults are interested almost equally in work-related learning and general education."[5] This finding is confirmed (if only tentatively) by the present study which indicates that approximately half of the subjects interviewed indicated a job-related reason for enrolling (Table I).

It may not be appropriate to compare the results of the present study with either of the two other studies done on University of California Extension students. Certainly any such comparisons should be made with serious qualifications as to their validity. In only two demographic elements is it possible to compare the two studies -- age and educational level obtained. It is purely speculation as to whether the differences discerned in the results arise out of the different geographical settings, the methodology employed (including most importantly sample selection), or, as would be the most interesting cause of variance, the passage of time.

The earliest study was done by Phillip Frandson at UCLA in 1967. He selected a probability sample of some 551 enrollees in credit courses (academic and professional) in the Spring semester in 1967. Although Dr. Frandson employed statistically valid methods, his restricting his sample to enrollees in credit courses may inhibit valid comparisons with the present studies. The other study is the one previously described in this paper performed in the Winter quarter, 1971, by Marjorie Shaevitz in San Diego. This study was not performed according to statistical methods, but nevertheless over 2000 students were polled. Again because of a lack of statistical validity, it may be inappropriate to compare the results of this study with the present study or with Dr. Frandson's study. However, despite the caveats above the data is presented in the two following tables and conclusions are drawn from the comparisons as though the comparisons are valid.

Table IX

Comparison of Age Distribution
of Adults in Three University Extension Programs

Age	UCLA Frandson 1967	San Diego Shaevitz 1971	Berkeley Matkin 1976
30 or less	25.6%	38%	36.1%
30-40	30.5	26	27.3
40-50	26.6	22	15.8
50+	15.5	14	10.2
	98.2%	100.0%	99.4%

It appears that University Extension may be serving proportionately fewer older people as time goes on, even though this would run counter to demographic trends.

Table X

Comparison of Educational Attainment of Adults
in Three University Extension, University of California Programs

Educational level	Frandson 1966	Shaevitz 1971	Matkin 1976
Less than bachelors	43.9%	22.3%	22.3%
Bachelors (4 year degree)	34.8	50.6	40.1
More than bachelor degree)	6.0	-	-
Grad degree	14.5	23.4	37.6
	99.2%	96.3%	100.0%

It appears from this table that the educational level of University Extension students has increased over the years. This finding would certainly reflect demographic trends.

Conclusion

It is hoped that the usefulness of this study will extend beyond the information contained herein and that in future years this study might be replicated and the results compared as in the previous section, to discern trends and shifts in service areas. These trends and shifts are often recognized programmatically before they are recognized by the organization as a whole. Changing services, changing clientele, require organizational adjustments, and those who would change organizations need coherent, valid information with external legitimacy. Statistical methodology such as the methods employed in this study can supply that legitimacy and insure the coherency and validity required.

FOOTNOTES

1. Houle, page 1.
2. Tough, page 250.
3. Ibid, pages 252-253.
4. Boshier, page 24.
5. Hefferlin, page 36.

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APPENDIX I

1-4

2037-(2)

UNEX STUDENT QUESTIONNAIRE

	COL.	ANSWER/CODE	
OBTAIN FROM APPLICATION:			
1. ORIGINAL COURSE ENROLLMENT EDP # 151662 or COURSE NAME Choosing & Buying a Home"	5-12		
2. SEX:	13	MALE 0	FEMALE 1

"Hello, my name is _____, and I'm with University Extension, University of California, Berkeley. We're doing a survey of our students to find out more about our student body and how people feel about the courses they take with Extension. Hopefully, this information can help us improve our program by giving us a clue as to the interests of the students. The information is confidential and the interview will only take _____ minutes or so. Do you have a few minutes to answer some questions?

3. We have you listed as having completed a course with Extension this fall. Is that correct? (If yes, go to question 4. If no, continue with part 3a.)	14	YES 1	NO 0
3a. Did you receive a refund? (If yes, go to question 3b. If no, go to question 4.	15	YES 1	NO 0
3b. Why were you unable to continue? _____ _____ _____ _____	16-23		

Thank you very much for your time.

INTERVIEW TERMINATED

		COL.	ANSWER/CODE	
4.	May I ask your age? _____	24-25	_____	
5.	Do you consider yourself a member of an ethnic minority? (If yes, go to question 5a. If no, go to question 6)	26	YES 1	NO 0
5a.	Which one? _____	27		
6.	What was the last grade or year of school that you completed?			
	Less than high school graduation ____		1	
	Completed high school ____		2	
	Some business school ____		3	
	Completed business school ____		4	
	1 year college ____		5	
	2 years college ____	28	6	
	3 years college ____		7	
	B.A. or equivalent ____		8	
	M.A. or equivalent ____		9	
	Professional degree ____		10	
	Doctoral degree ____		11	
7.	Name of last school you attended: _____	29-36		
8.	Are you married?	37	YES 1	NO 0
9.	Do you have any children?	38	YES 1	NO 0
10.	How many? _____	39-40		

	COL.	ANSWER/CODE	
11. Are you currently employed? (If yes, go to 12-14)	41	YES 1	NO 0
(12.) Full time or part time	42	FT 1	PT 0
(13.) What is your occupation, profession or job title? _____ _____ _____	43-50	_____	
(14.) How many years have you been doing this kind of work? _____	51-52	_____	
(15.) Is your spouse currently employed?	53	YES 1	NO 0
(16.) Full time or part time	54	FT 1	PT 0
17. What is your approximate family income? _____	55-56	_____	
18. How many years have you lived in the Bay Area? _____	57-58	_____	
19. Do you subscribe to a daily newspaper?	59	YES 1	NO 0
(20.) Which one(s)? _____ _____	60-67		
21. Do you subscribe to a monthly or quarterly journal?	68	YES 1	NO 0
(22.) Which one(s)? _____ _____ _____	69-76		

	COL.	ANSWER/CODE	
	CARD 2		
23. How many times have you attended a public lecture in the past three months? _____	1-2	_____	
24. What, if any, social, fraternal, professional, or community organizations do you belong to? _____	3-10	_____	
25. Are you a registered California voter?	11	YES 1	NO 0
26. How did you first hear of University Extension? _____ (from a friend, Lifelong Learning, newspaper, radio, television, other)	12-19		
27. Did you take the course for credit? (If yes, go to 28)	20	YES 1	NO 0
(28.) Do you expect to apply the credit you receive from taking this course toward a degree?	21	YES 1	NO 0
29. Why did you decide to take an extension course? _____	22-29		

(probe on next page)

11

	COL.	ANSWER/CODE		
(probe: work on degree, take classes which may eventually apply to a degree, learn more about yourself, to pursue a personal interest, develop a skill, aid for job or job preparation, to associate with people of similar interests, etc.)				
(30.) Is your employer in support of your taking an Extension class?	30	YES 1	NO 0	
(31.) Does your employer consider successful completion of the course as one basis for advancement?	31	YES 1	NO 0	
(32.) Was part or all of your tuition paid for by your employer?	32	YES 1	NO 0	
33. Are you aware of the Continuing Education Unit? (CEU)? (if yes go to next question, if no go to 35.)	33	YES 1	NO 0	
(34.) If so, did you or would you use this option? Yes___ No___	34	YES 1	NO 0	0 2
35. How many courses have you previously completed in University Extension? _____	35-36	_____		
36. Are you considering taking other classes through University Extension?	37	YES 1	NO 0	
(37.) If so, in what fields? _____ _____ _____	38-45			

	COL.	ANSWER/CODE
38. Have you completed any night school or adult education courses other than at University Extension?	46	YES 1 NO 0
(39.) If so, what was the last course you took? _____ _____ _____	47-54	
Where? _____ _____	55-62	
When? _____ _____	63-68	
40. What was the format of the Extension course you took (or are taking)? _____ _____ (probe: workshop, seminar, formally structured class, lecture series with guest speakers, residential (live-in) conference, intensive one-day conference)	69-76	_____
	CARD 3	
41. How good was this format in terms of your needs and interests? Very good___ Somewhat good___ Neutral___Somewhat poor___ Very poor___	1	1 2 3 4 5
42. How good was the course in general, in terms of your expectations from the publicized description? Very good___ Somewhat good___ Average___ Somewhat poor___ Very poor___	2	1 2 3 4 5

		COL.	ANSWER/CODE
43.	What specifically did you dislike about present or past courses taken through University Extension? _____ _____ _____ _____	3-10	___ ___ ___ ___ ___
44.	What did you like? _____ _____ _____	11-18	___ ___ ___ ___ ___
45.	Did you feel you had an opportunity to influence the direction of the course to fit your needs and interests more closely? High opportunity____ Some opportunity____ No opportunity____	19	HO 1 SO 2 NO 3
46.	What things, if any, might make it difficult or prohibit you from taking Extension courses? _____ _____ _____ _____ (probe: family commitments, work commitments, cost, location, child care, other _____)	20-27	
47.	Preferred hours, if any: _____	28-35	

		COL.	ANSWER/CODE
48.	What types of classes, programs, certificates, credentials or degrees would you like to see Extension offer that it is not now offering? _____ _____ _____ _____	36-43	
50.	Speaking generally about your experience experience(s) with University Extension, were (are) you very satisfied____, somewhat satisfied____, neutral____, somewhat unsatisfied____, or very unsatisfied____? Comments: _____ _____ _____ _____ _____ _____ _____	44	____ ____ ____ ____

APPENDIX II

CODEBOOK

Record 1	Col.:	
	1-4 :	Cash register number(I.D.)
V1 = EDP	5-10:	Course EDP number
	11-12:	BLANK
V2 = SEX	13:	0=Male; 1=Female
	14-23:	BLANK
V3 = AGE	24-25:	Age; 99=no answer
V4 = MIN	26-27:	Ethnic minority: 0=not minority; 1=Black; 2=Chicano; 3=Oriental; 4=American Indian; 5=Other suppressed minority
V5 = EDUC	28-29:	Last grade completed
V6 = SCHOOL	30-33:	Four-letter abbreviation of last school attended
	34-36:	BLANK
V7 = MAR	37:	Married: 1=Yes; 0=No
V8 = CHILD	38:	Children: 1=Yes; 0=No
V9 = NUMCHILD	39-40:	Number of children
V10= EMPLOY	41:	Currently employed: 1=Yes; 0=No
V11= FTPT	42:	1=Full-time; 0=Part-time; 8=DNA
V12= OCCU	43-46:	Occupation, profession, or job title: Four-letter abb.
	47-50:	BLANK
V13= YRSWRK	51-52:	Number of years doing this kind of work
V14= SPSEMPL	53:	Spouse currently employed: 1=Yes; 0=No; 8=DNA
V15= SFTPT	54:	1=Full-time; 0=Part-time; 8=DNA
V16= FAMINC	55-56:	Family income, in thousands: 88=DNA; 99=no answer
V17= YRSBAY	57-58:	Years lived in the Bay Area: 88=DNA; 99=no answer
V18= NWS	59:	Newspaper subscription: 1=Yes; 0=No
V19= NAMNWS	60-63:	Name of newpaper: Four-letter abb.
	64-67:	BLANK

Record 1, cont.

V20= JRNL	68:	Monthly journal subscription: 1=Yes; 0=No; 9=no answer
V21= NAMJRNL	69-72:	Four-letter abb. of field of the journal

Record 2

V22= LECT	1-2 :	Number of times attending a public lecture in last three mos.: 00=none; 99=no answer
V23= MEMBER	3-4:	Number of organizational memberships (see questionaire)
	5-10:	BLANK
V24=VOTE	11:	Registered California voter: 1=Yes; 0=No
V25= SRINFO	12-15:	How did you hear about UNEX?: Four-letter abb.
	16-19:	BLANK
V26= CREDIT	20:	Course for credit: 1=Yes; 0=No
V27= TDEGREE	21:	Application of credit toward degree: 1=Yes; 0=No; 8=DNA
V28= WCT	22-25:	Why course taken: Four-letter abb.
	26-29:	BLANK
V29= EMPLRSPT	30:	Employer support: 1=Yes; 0=No; 8=DNA
V30= ADVANCE	31:	Does employer consider course as advancement basis?: 1=Yes; 0=No; 8=DNA
V31= TUITION	32:	Tuition paid by employer: 1=Yes; 0=No; 8=DNA
V32= CEU	33:	CEU awareness; 1=Yes; 0=No
V33= USECEU	34:	Use of CEU option: 1=Yes; 0=No; 8=DNA
V34= CRSCMPLT	35-36:	Number of courses completed in UNEX: 0=none previous
V35= OTHCLSX	37:	Considering taking other classes through UNEX: 1=Yes; 0=No
	38-45:	BLANK
V36= OTHCLS	46:	Other night school or adult education other than UNEX: 1=Yes; 0=No; 9=no answer

Reocrd 2, cont.

	47-48:	BLANK
V37= FRMT	69-72:	Format of UNEX class: Four-letter abb.
	73-80:	BLANK

Record 3:

V38= FRMTEV	1:	How good was the class format: 1=very good; 5=very poor
V39= CRSEV	2:	How good in general was the course: 1-5; 8=DNA
	3-18:	BLANK
V40= INFOPP	19:	Opportunity to influence course: 1=High; 2=Some; 3=None
V41= DIFF	20-23:	Things making it difficult to take UNEX courses: Four-letter ab
	24-27:	BLANK
V42= PHRS	28-31:	Preferred hours: Four-letter abb.
	32-43:	BLANK
V43= TEV	44:	Overall satisfaction: 1-5; 9=no answer
	45-80:	BLANK

APPENDIX II

CODEBOOK SUPPLEMENT

		Recode:
V1=EDP:	01,02=Arts, Humanities	1
	05,06=Science, Math	8
	10,11=Social Science	5
	15,16,17=Business Management	7
	20,21=Education	4
	25=Environmental Design	6
	30,31=Engineering	9
	35=International Studies	3
	75,76,77=Independent Studies	2

V6=SCHOOL: 1=UC; 2=Local 4-year (non-UC); 3=Non-local, non-UC, 4-year; 4=Community Colleges

LONE=Lone Mountain College
SFST=San Francisco State
HOLY=Holy Name College
WELS=Wellesley College
UCIR=UC Irvine
UNUT=University of Utah
COLU=Columbia
ALAM=College of Alameda
GEWU=George Washington University
BERK=UC Berkeley
UORE=University of Oregon
CREI=Creighton University
BRYN=Bryn Mawr
INDI=Indiana University
STAN=Stanford
GOLD=Golden Gate University
CALT=Cal Tech Pasadena
TXTC=Texas Technological
CABR=Cabrini College
SJST=San Jose State
CONT=Contra Costa College
FRES=Fresno State
MNHT=Manhatanville College
UNNH=University of New Hampshire
UNNC=University of North Carolina
BOCO=Boston State College
UCSF=UC San Francisco
LANE=Laney College
CSSA=Cal State Sacramento
AZSU=Arizona State University
DEAZ=DeAnza College
SFCC=San Francisco City College
CSPP=Cal School of Prof. Psych.
CSNO=Cal State Northridge
DUCA=Duquene
HAWY=Cal State Hayward
BARB=UC Santa Barbara
FERN=San Fernando State College
CARN=Carnegie-Mellon University
CORN=Cornell
HARV=Harvard
HAWA=University of Hawaii
CHIC=Chico State
MITT=MIT
CALW=Cal Western University
SJCC=San Jose City College
UCDA=UC Davis
MISH=Mills High School
CIAS=Cal Inst. of Asian Studies
CLAR=University of Santa Clara
DIAB=Diablo Valley College
WHAR=Wharton College
SOLA=Solano College
SFLO=South Florida University
USCA=USC
UBRC=University of British Columbia
WYOM=University of Wyoming
TULA=Tulane
OCCI=Occidental
RICH=Richmond High
SYRA=Syracuse
KANS=University of Kansas
CCSA=City College of Sacremento
ARKA=University of Arkansas
MERR=Merritt College
CSLA=Cal State L.A.
CCSB=City College of Santa Barbara
BOGA=Bogan Jr. College
ARIZ=Univesity of Arizona
CALP=Cal Poly San Luis Obispo
REDB=Red Bluff High School
WAYN=Wayne State
WASH=University of Washington
NMEX=University of New Mexico
SMAT=College of San Mateo
CLAS=Claremont Graduate School
WILL=Willamette University
COLO=University of Colorado
DREX=Drexel University
EVAN=Evanston College
MILL=Mills College

APPENDIX II

V12=OCCU: 0=None; 1=Service; 2=Teacher; 3=Quasi-professional and supervisory; 4=High professional

NONE=None
CRED=Credit field, leasing agent
TEAC=Teacher
STUD=Student
BATE=Bank teller
LABT=Lab technician
SUPE=Supervisor
SECR=Secretary
MEDC=Medical clerk
SALE=Salesperson
SYAN=Systems analyst
BANK=Banker
DOCT=Doctor (M.D.)
CIVE=Civil engineer
PROF=Professor
STEW=Stewardess
NURS=Nurse
PSYC=Psychologist
ACCT=Accountant
ENGN=Engineer
PHAR=Pharmacist
ARTT=Artist
EMSR=Employee Services
LEAS=Legal assistant
REAS=Researcher
BOOK=Bookkeeper
SOCW=Social worker
ARCH=Architect
ENVI=Environmental designer
LIBR=Librarian
DIET=Dietician
BROK=Stock broker
STAT=Statistician
PUBL=Publisher
DETE=Dental Technician
SMBS=Retailer
INSU=Insurance
PAIN=Painter
PLAN=Planner
CONS=Consultant
LAWY=Lawyer
DESI=Designer
CHEM=Chemist
EXEC=Executive
CRAF=Craftsman
ANIM=Animal keeper

V19=NAMNWS: 1=Local; 2=Examiner, Chronicle, or Tribune; 3=National

FBEE=Fresno Bee
EXAM=S.F. Examiner
ALAM=Alameda News
CRON=S.F. Chronicle
CREX=Chronicle and Examiner
TRIB=Oakland Tribune
GAZE=Berkeley Gazette
SJMN=San Jose Mercury News
GZCR=Gazette and Chronicle
CRTR=Chronicle and Tribune
WALL=Wall Street Journal
SBEE=Sacramento Bee
DYON=Dayton Daily News
PALO=Palo Alto Times
MBEE=Modesto Bee
LATI=L.A. Times
NAPA=Napa Register
NYTI=New York Times
CONT=Contra Costa Times
STOC=Stockton Record
VALL=Vallejo News
TAHO=Tahoe Daily Tribune
RICH=Richmond Independent
ROSA=Santa Rosa Press Democrat
FBCR=Fresno Bee and Chronicle
GZEX=Gazette and Examiner
SMAT=San Mateo Times
CRUZ=Santa Cruz Sentinel

V21=NAMJRNL:

TRON=Electronics journals
GOVT=Governmental
SCAM=Scientific American
MEDI=Medical journals
LEGL=Legal journals
REAL=Real estate
PSYC=Psychiatry
ENGN=Engineering
SOCI=Social science
CHEM=Chemistry journals
EDUC=Education journals
AMSC=American Scholar
AUDO=Audobon Society
BUSI=Business and accounting
ARCH=Architectural journals
SCIE=Science journals
HIST=Historical journals
ARTT=Art journals

APPENDIX II

V25=SRINFO

	Recode:
OWNI=Own initiative	2
WORK=At job, through work	3
BROC=Brochure in mail	1
FRIE=Friend	2
SPOS=Spouse	2
SCHO=At school, was student, etc.	3
NEWS=Newspaper	0

V28=WCT

PERS=Personal interest	1
CRED=Credential	2
JOBS=Job-related	3
BUSI=To help business	3
DEGR=Degree	2
REAS=Research	2

V37=FRMT

FORM=Formally structured course
WORK=Workshop
ODSE=One-day seminar
TDSE=Two-day seminar
TWSE=Two-weekend seminar
SEMI=Full-length seminar
GUES=Lecture with guest speakers
FIEL=Field study

V41=DIFF

BADL=Dangerous location
DIST=Distance - too far
WORK=Work committments
NONE=Nothing
FAMI=Family committments
WOFA=Work and family committments
COST=Cost
DICO=Distance and cost
WOCO=Work committments and cost
TIME=Time constraints (general)
DIWO=Distance and work committments
PARK=Parking
TIWO=Time and work committments

V42=PHRS

NONE=None
WEND=Weekend
LAFT=Late afternoon
EVEN=Evening
MORN=Mornings
EVWE=Evenings and weekends
DAYT=Daytime

APPENDIX III WAS REMOVED BECAUSE OF ILLEGIBILITY.